

WHAT IS CLAIMED IS:

sub A 5 1. An apparatus for testing a semiconductor integrated circuit, comprising:

a test circuit board constructed so as to exchange a signal with a semiconductor integrated circuit under test including an analog-to-digital converter circuit for converting an analog signal to a digital signal or a digital-to-analog converter circuit for converting a digital signal to an analog signal;

10 a test ancillary device disposed in the vicinity of the test circuit board, which has data memory for storing digital test data output from the analog-to-digital converter circuit or digital test data produced by converting the analog test data output from the digital-to-analog converter circuit into a digital signal, and an analysis section for analyzing the digital test data stored in the data memory; wherein the data memory is divided into two memory sections such that, when digital test data are stored in one memory section, the digital test data that have already been stored in the other memory section are 15 loaded for analysis purpose.

20 2. The apparatus for testing a semiconductor integrated circuit according to claim 1, wherein the data memory has first and second memory devices, and each of the first and second memory devices has the first and second memory sections.

25 3. The apparatus for testing a semiconductor integrated

circuit according to claim 2, wherein the test ancillary device has memory input changeover means, and the memory input changeover means stores the digital test data into the first memory device or the second memory device in a switchable manner.

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4. The apparatus for testing a semiconductor integrated circuit according to claim 2, wherein the test ancillary device has memory output changeover means, and the memory output changeover means uploads an output from the first memory device or an output from the second memory device to the analysis section in a switchable manner.

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5. The apparatus for testing a semiconductor integrated circuit according to claim 1, wherein the data memory is constituted of one memory device having the first and second memory sections therein.

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6. A method of testing a semiconductor integrated circuit through use of an apparatus for testing a semiconductor integrated circuit, the test apparatus comprising:

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a test circuit board constructed so as to exchange a signal with a semiconductor integrated circuit under test including an analog-to-digital converter circuit for converting an analog signal to a digital signal or a digital-to-analog converter circuit for converting a digital signal to an analog signal;

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a test ancillary device disposed in the vicinity of the test circuit board, which has data memory for storing digital

test data output from the analog-to-digital converter circuit or digital test data produced by converting the analog test data output from the digital-to-analog converter circuit into a digital signal, and an analysis section for analyzing the digital 5 test data stored in the data memory; wherein the data memory is divided into two memory sections such that, when digital test data are stored in one memory section, the digital test data that have already been stored in the other memory section are loaded for analysis purpose.

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